

## POVIDONE IODINE TO INHIBIT THE GROWTH OF BACTERIA

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**Introduction:** The awareness of keeping a good hygiene is increasing these days. One of the most important parts of keeping a good hygiene is by utilizing several antiseptics or antibacterial agents. One of which is iodine, which has a microbicide action against most of the important health-related microorganism. Povidone, a popular carrier for iodine, slowly and continuously release free iodine into solution, maintaining the microbicidal activity for a long period of time and decreases the toxicity. The efficacy of Povidone iodine on different concentrations is still questionable; some bacteria like *Escherichia coli*, *Staphylococcus aureus*, and *Pseudomonas aeruginosa* may even develop resistance towards it. Through this study, the author wants to explain the efficacy of povidone iodine as one of the antimicrobial agents to prevent growth of aforementioned bacteria.

**Methods:** This research was conducted through a true experimental laboratory study by applying various MICs. The 1<sup>st</sup> group consists of 3 tubes with Mueller-Hinton broth containing *Staphylococcus aureus*, which was given 10%, 5%, and 2.5% of povidone iodine respectively. The 1<sup>st</sup> group consists of 3 tubes with Mueller-Hinton broth containing *Escherichia coli*, which was given 10%, 5%, and 2.5% of povidone iodine respectively. The 1<sup>st</sup> group consists of 3 tubes with Mueller-Hinton broth containing *Pseudomonas aeruginosa*, which was given 10%, 5%, and 2.5% of povidone iodine respectively. Each group has an extra tube with only a nutrient agar and the selected bacteria, which acts as a positive control. After 24 hours of incubation, every tube from each group are smeared to an agar to be examined.

**Results:** All of the smears of Povidone iodine containing tubes, showed no growth of bacteria, while in contrast, the growth of bacteria in control positive plates are positive.

**Conclusion:** 2.5% of concentration of Povidone iodine alone is enough to successfully inhibit the growth of *Staphylococcus aureus*, *Escherichia coli* and *Pseudomonas aeruginosa* with no sign of bacterial resistance towards Povidone iodine.